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研發部 2011.04.12 簡世宗 | 請見附件

COTEK
正式文件，妥善保存

COTEK

S150,S300 Series
Pure Sine Wave Inverter
User's Manual

COTEK ELECTRONIC CO., LTD.
文管中心
發行章

CE

e13 022025

e13 022078

COTEK

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1. Important Safety Information

WARNING!

Before installing and using the Inverter, you need to read following safety information carefully.

1-1. General Safety Precautions

1-1-1. Do not expose the Inverter to water, mist, snow, or dust. To reduce the risk of hazard, do not cover or obstruct the ventilation shaft. Do not install the Inverter in a zero-clearance compartment. Overheating may occur.

1-1-2. To avoid the risk of fire and electronic shock, make sure that existing wiring is in good electrical condition and not undersize. Do not operate the Inverter with damaged or substandard Wiring.

1-1-3. There are some components in the inverter can cause arcs and sparks. To prevent from fire or explosion, do not put batteries, flammable materials, or anything should be ignition–protected around the inverter.

1-2. Precautions When Working with Batteries

1-2-1. If battery acid contacts your skin or clothing, you need to wash it out immediately with soap and water. If acid enters into your eyes, immediately flush your eyes with running cold water for at least 20 minutes and get medical attention immediately.

1-2-2. Never smoke or make a spark or flame in the vicinity of batteries or Engines.

1-2-3. Do not drop a metal tools on the battery. The resulting spark or short-circuit on the battery or other electrical parts may cause an explosion.

1-2-4. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead-acid battery, A lead-acid battery may produce a short-circuit current who's temperature is high enough to weld these metal items and cause a severe burn.

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2. Features

2-1. Electrical Performance 150W

Specification	Model No.			
Item	S150-112	S150-124	S150-212	S150-224
Continuous Output Power	150W			
Surge Rating	200W			
Input voltage	12V	24V	12V	24V
Input voltage Range	10.5 – 15.0	21.0 – 30.0	10.5 – 15.0	21.0 – 30.0
Output Voltage	110VAC ±5%		230VAC ±5%	
Frequency	50 / 60Hz ±0.3%			
Max. Efficiency	87%	88%	87%	88%
No Load Current Draw	<0.3A			
Output Waveform	Pure Sine Wave (THD 6.0% Typical)			
Power Factor Allowed	cos θ -90° ~ cos θ +90°			
Protection	Overload, Short Circuit, Reverse Polarity (Fuse), Over / Under Input Voltage, Over Temperature.			
Remote Control	Yes, On/Off controlled by external switch			
Safety Certification	UL458	EN60950-1		
EMC	FCC Class B	EN55022:1997 EN61000-3-2:1998 EN61000-3-3:1995 EN55024:2001	e-mark e13 022025	
Operating Temperature	0 – 40 ℃			
Storage Temperature	-30℃ to 70℃			
Fan Cooling	Thermostatically controlled			
Dimensions	200(L) x 132(w) x 72(H) mm / 7.87(L) x 5.20(W) x 2.83(H) Inch			
Weight	2.7 kgs. / 5.4 Lbs.			

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Note: The specifications are subject to change without notice.

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2-2. Electrical Performance 300W

Specification	Model No.			
Item	S300-112	S300-124	S300-212	S300-224
Continuous Output Power	300W			
Surge Rating	400W			
Input voltage	12V	24V	12V	24V
Input voltage Range	10.5 – 15.0	21.0 – 30.0	10.5 – 15.0	21.0 – 30.0
Output Voltage	110VAC ±5%		230VAC ±5%	
Frequency	50 / 60Hz ±0.3%			
Max. Efficiency	89%	89%	89%	89%
No Load Current Draw	<0.35A			
Output Waveform	Pure Sine Wave (THD 6.0% Typical)			
Power Factor Allowed	cos θ -90° ~ cos θ +90°			
Protection	Overload, Short Circuit, Reverse Polarity (Fuse), Over / Under Input Voltage, Over Temperature.			
Remote Control	Yes, On/Off controlled by external switch			
Safety Certification	UL458	EN60950-1		
EMC	FCC Class B	EN55022:1997 EN61000-3-2:1998 EN61000-3-3:1995 EN55024:2001	e-mark e13 022078	
Operating Temperature	0 – 40 ℃			
Storage Temperature	-30℃ to 70℃			
Fan Cooling	Thermostatically controlled			
Dimensions	237(L) x 155(w) x 72(H) mm / 9.33(L) x 6.10(W) x 2.83(H) Inch			
Weight	3.5 kgs. / 7.7 Lbs.			

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Note: The specifications are subject to change without notice.

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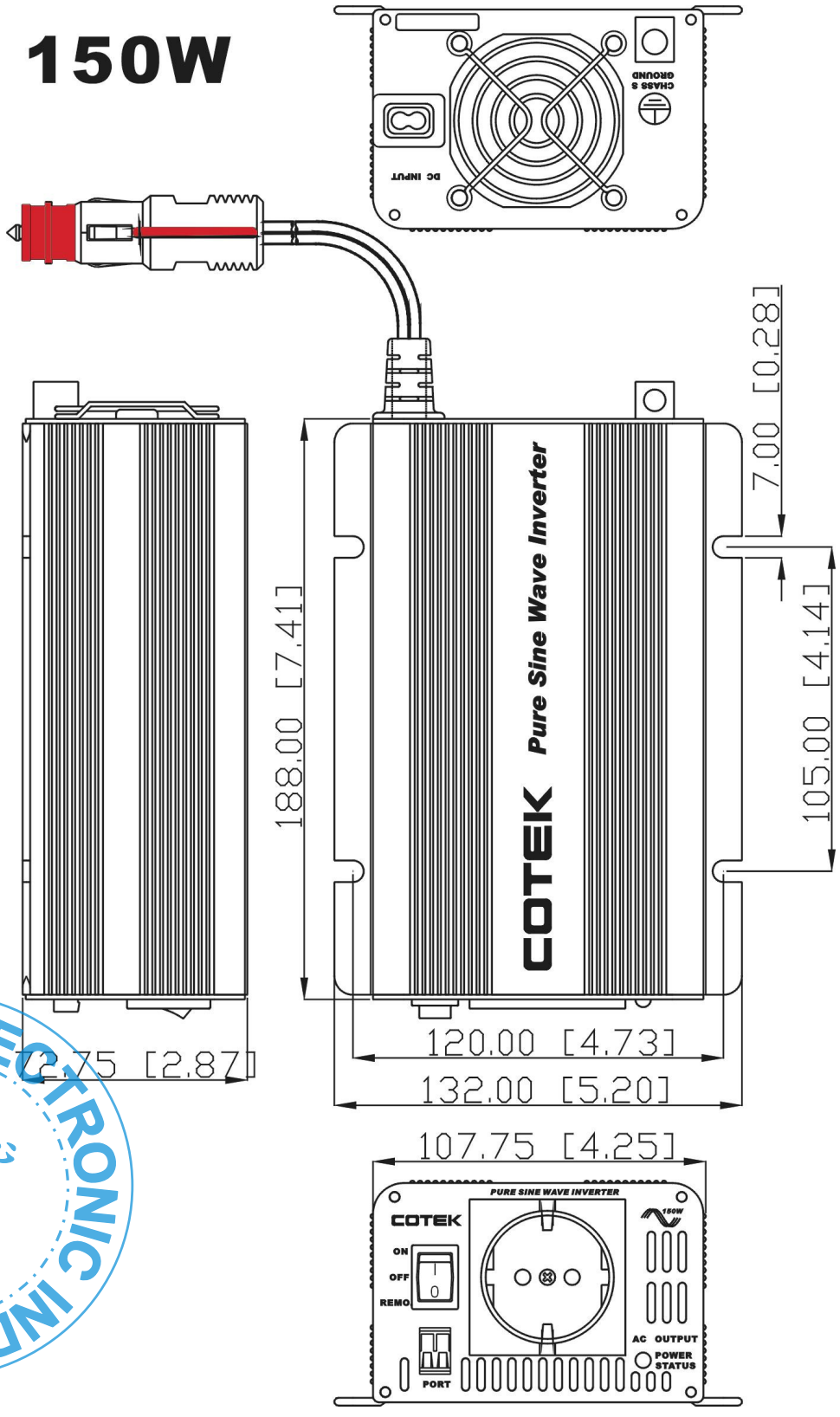
2-3. Mechanical Drawing



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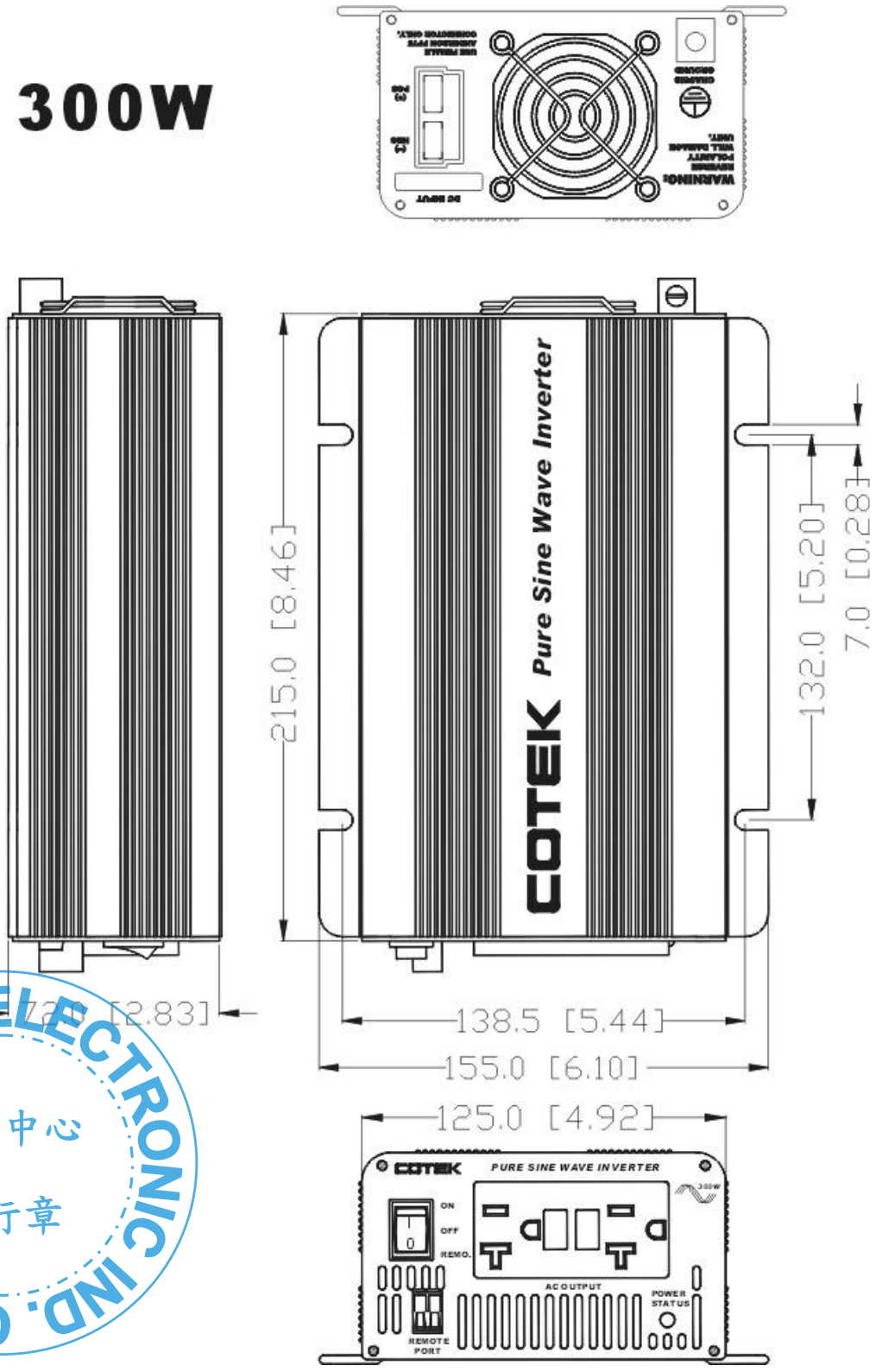
2-4. Mechanical Drawing



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3. Instructions

S150 and S300 series are very reliable, portable, and fully protected. These pure sine inverters are used in a wide range of applications such as mobiles, office equipments, home entertainment, electronic appliances, etc.

To get the most effective power inverter, it must be installed and used properly. Please read the instructions of this manual before you install and operate this model.

3-1. Front Panel Operations

3-1-1. ON / OFF REMOTE switch：

Leave the switch in the down position (OFF) during installation.

3-1-2. LED display indicates Power Status

LED	Conditions	Status
Solid Green	———	AC Power OK
Fast Red Blink	- - - - - - - -	OVP
Slow Red Blink	— — — —	UVP
Intermittently Red Blink	-- -- --	OTP
Solid Red	———	OLP

3-1-3. Remote Port：Place 0.75mm^2 and Screw type cable between the remote port and the panel.

3-2. Rear Panel Operations

3-2-1. Ventilation shaft：Keep the ventilation shaft a distance (at least 3 inch) from anything surrounding it

3-2.2. Input terminals：Connect the input terminal to 12v / 24V / 48V battery or other 12V / 24V / 48V power source. 【＋】represents positive, and【－】represents negative. Reverse polarity connection will blow the internal fuse and may damage inverter permanently.

3-3-3. Use wire # 8 AWG to connects Chassis ground with Vehicle Chassis.

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WARNING！

Do not combine the 12V model with 24V battery or the unit will be destroyed immediately.

Operate with the inverter without a proper ground connection may cause an electrical safety hazard.

Damage caused by reversed polarity is not covered by the warranty. Ensure the power switch is in the OFF position before putting the battery in.

3-3. AC Safety Grounding：

During AC wiring installation, AC input and output ground wires are connected to the inverter. The AC input ground wire must connected to the incoming ground from AC utility source.

The AC output ground wire should go to the grounding point for your loads (for example, a distribution panel ground bus).

3-3-1. Neutral Grounding (GFCI'S)：

110V models：The neutral conductor of the AC output circuit of the Inverter is automatically connected to the safety ground during inverter operation. This conforms to National Electrical Code requirements that separately derived from AC sources (such as inverters and generators) which have their neutral conductors tied to ground in the same way as the neutral conductors from the utility tied to ground at the AC breaker panel. For models configured with a transfer relay, while AC utility power is present and the Inverter is in bypass mode, this connection (the neutral of the Inverter's AC output to input safety ground) is not present so that the utility neutral is only connected to ground at your breaker panel, as required. Cotek has tested the following GFCI-properly when connected to the output of the Inverter.

WARNING！

Never connect the inverter's output to the AC distribution grid, such as the household AC wall outlet.

It will damage the Inverter.

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3-4. Installation

Before connecting your applications to the inverter, always check the power draw of your appliances. The inverter can supply surge power for a short time so as to start up the electrical equipment such as motors, pumps… that need more power while starting up.

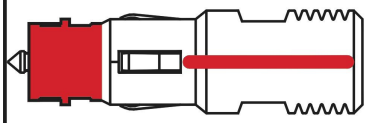
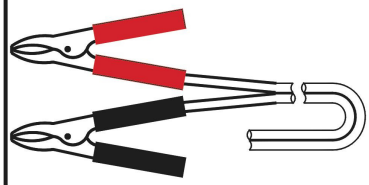
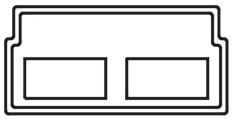
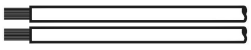
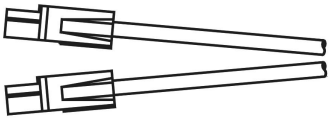
When all the above requirements are checked OK and satisfied and all connections are made, it's time to turn on the inverter by switching the power to ' I ' position. The sine wave filters provide sine wave output voltage when driven from AC outlet.

To save the battery power, you are highly recommended to turn off the inverter when it is not used.

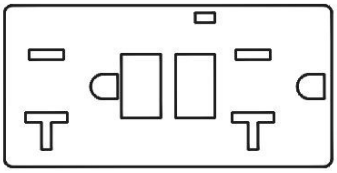
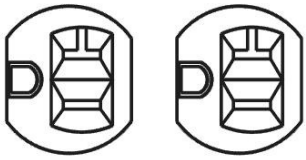
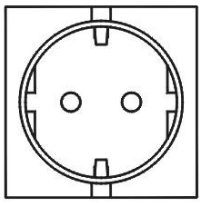
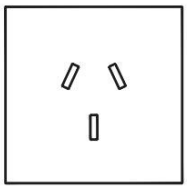
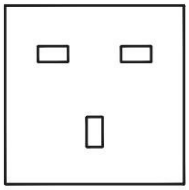
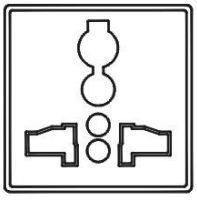
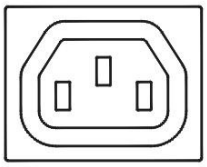
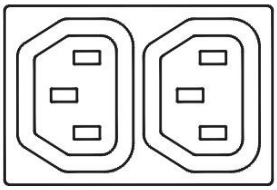
DC input voltage status as follows:

Model	DC Input Over Voltage		DC Input Under Voltage	
	Shut-down	Restart	Shut-down	Restart
12V models	15.3	14.8	10.5	12.5
24V models	30.6	29.6	21.0	25.0

3-5. DC Input (Outlet sockets available)：

CIGARET	CLAMP	POWER CLAW
		
STRIPPED WIRE	PP45	
		

3-6. AC output (Outlet Sockets available)：

North America (GFCI)	NEMA 5-15R
	
Continental European	Australia / New Zealand
	
United Kingldom	Universal
	
IEC-1	IEC-2
	

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發行章

3-7. ON / OFF / REMOTE Main Switch.

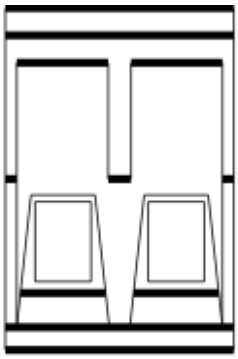
3-7-1. Before installing the inverter, make sure the main switch must be “OFF”.

3-7-2. Before using the remote unit, make sure the main switch must be “ REMOTE”.

3-7-3. Ensure the remote control contact is off.

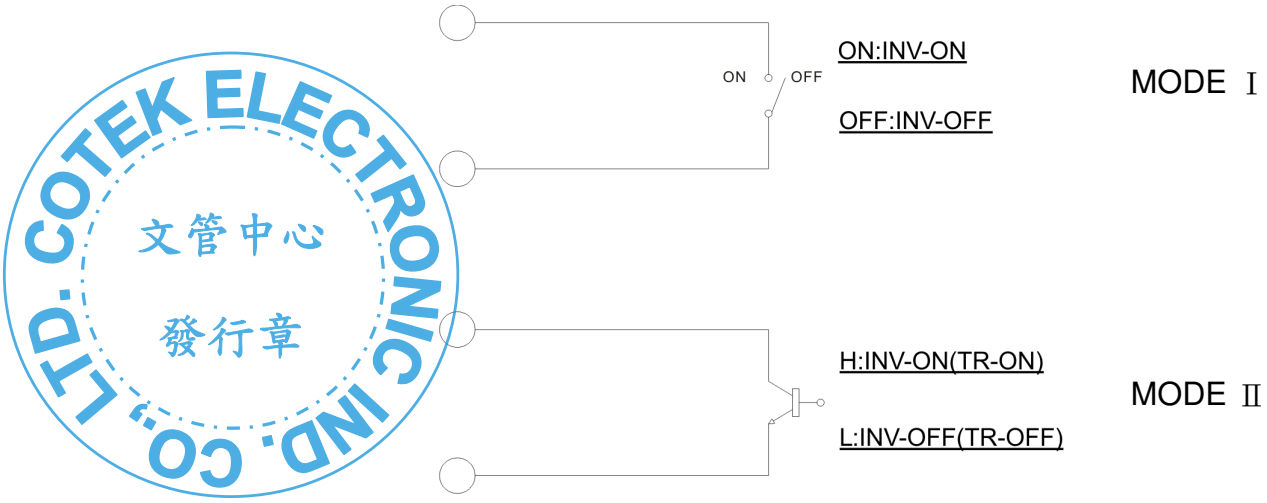
3-7-4. Remote Port：Place 0.75mm^2 and Screw type cable between the remote port and the panel.

3-7-5. Remote port ON/OFF inverter setup status



REMOTE PORT

REMOTE PORT



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4. Troubleshooting：

WARNING！

Do not open or disassemble the Inverter. Attempting to service the unit yourself may cause the risk of electrical shock or fire.

Problems and Symptoms	Possible Cause	Solutions
No output voltage, the LED glows Red light.		
a. Power status light is blinking red fast.	Over input voltage.	Check input voltage. Reduce input voltage.
b. Power status light is blinking red slowly.	Low input voltage.	Recharge battery. Check connections and cable.
c. Power status light is blinking red intermittently.	Thermal shutdown	Improve ventilation. Make sure ventilation shafts in the inverter are not obstructed. Lower ambient temperature.
d. Power status light is glowing red steadily.	Short circuit, Wiring error, Overload	Check AC wiring for short circuit. Remove load.

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5. Maintenance：

Very little maintenance is required to keep your inverter operating properly. You should clean the exterior of the unit periodically with a damp cloth to pre vent accumulation of dust and dirt. At the same time, tighten the screws on the DC input terminals.

6. Warranty：

We guarantee this product against defects in materials and workmanship for a period of 24 months from the date of purchase and will repair or replace any defective power inverters if you directly returned them to us with postage paid. Please note that Cotek is only responsible for ensuring our products are operational before delivering. This warranty will be considered void if the unit has been misused, altered, or accidentally damaged. Cotek is not liable for anything that occurs as a result of the user's fault.

7-1. FCC (Class B) Declaration of Conformity

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2. 1077(a)

The following equipment:

Product Name : PURE SINE WAVE INVERTER

Trade Name : COTEK

Model Number : S150-112, S150-124, S300-112, S300-124

It's herewith confirmed to comply with the requirements of FCC Part 15 Rules (Class B). Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and

(2)This device must accept any interference received, including interference that may cause undesired operation.

The result of electromagnetic emission has been evaluated by QuieTek EMC laboratory (NVLAP Lab. Code : 200347-0) and showed in the test report.
(Report No. : QTK-039H044F)

It is understood that each unit marketed is identical to the device as tested, and Any changes to the device that could adversely affect the emission Characteristics will require retest.
The following importer / manufacturer is responsible for this declaration:

Company Name _____

Company Address _____

Telephone _____ Facsimile : _____

Person is responsible for marking this declaration:

_____ _____

Name (Full name) Position / Title

_____

Date Legal Signature

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7-2. CE (EMC EN55022) Declaration of Conformity

CE

Declaration of Conformity

The following products is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC). The listed standard as below were applied:

The following Equipment:

Product	:	PURE SINE WAVE INVERTER
Trade Name	:	COTEK
Model Number	:	S150-212, S150-224, S300-212, S300-224

This product is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility Directive (89/336/EEC).For the evaluation regarding EMC, the following standards were applied:

RFI Emission:

EN55022:1994+A1:1995+A2:1997 Class B	: Emission standard
EN 61000-3-2:1995 Class A Amendment 1:1998 Amendment 2:1998	: Limits for harmonic current emission
EN 61000-3-3:1995	: Limitation of voltage fluctuation and flicker in low-voltage supply system

Immunity :

EN 55024:1998	:Immunity standard

The following importer/manufacturer is responsible for this declaration:

Company Name : _____

Company Address : _____

Telephone : _____ Facsimile : _____

Person is responsible for marking this declaration:

_____ _____

Name (Full Name) Position/ Title

_____ _____

Date Legal Signature

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7-3. CE (LVD EN60950-1) Declaration of Conformity

EU Declaration of Conformity

According to the Low Voltage Directive 73/23/EEC and the Amendment Directive 93/68/EEC

For the following equipment:

Product:	DC-AC Inverter
Type Designation/Trademark:	S150-224, S300-224, S150-212, S300-212
Manufacturer's Name:	Cotek Electronic Ind. Co., Ltd.
Manufacturer's Address:	No. 33, Rong Hsin Rd., Pa The City, Taoyuan Country, Taiwan

is herewith confirmed to comply with the requirements set out in the Council Directive 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC.
For the evaluation of the compliance with this Directives, the following standards were applied:
EN 60950

Responsible for making this declaration is the :
Manufacturer ☐ Authorized representative established within the EU ☐
Authorized representative established within the EU (if applicable) :
Company Name : Cotek Electronic Ind. Co., Ltd.
Company Address : NO.33 Rong hsin Road Pa Teh city Taoyuan County Taiwan.

COTEK ELECTRONIC IND. CO., LTD. 文管中心 發行章

Person responsible for making this declaration
Name, Surname :
Position/Title :

(Place) (Date) (Company stamp and legal signature)

7-4. e-mark S150 (e13 022025) Declaration of Conformity

GRAND-DUCHE DE LUXEMBOURG

MINISTERE DES TRANSPORTS

Luxembourg, le 09 février 2004
19-21, Boulevard Royal
L-2910 Luxembourg
Tél. 478-1 – Télécopieur 241 817 – Télex 1465 CIVAIR LU

REFERENCE: e13*72/245*95/54*2025*00

ANNEXES: Documentation technique

Certificat de réception CE par type
EC Type-Approval Certificate

Communication concernant: [1]
Communication concerning the:

- **la réception par type**
- type-approval
- ~~**l'extension de la réception par type**~~
- ~~extension of type-approval~~
- ~~**le refus de la réception par type**~~
- ~~refusal of type approval~~
- ~~**le retrait de la réception par type**~~
- ~~withdrawal of type approval~~

d'un ~~type de véhicule~~ / ~~composant~~ / entité technique [1] **en ce qui concerne la directive 72/245/CEE conformément au dernier amendement par la directive 95/54/CE.**
of a ~~type of vehicle~~ / ~~component~~ / separate technical unit with regard to Directive 72/245/EEC, as last amended by Directive 95/54/EC.

Numéro de réception par type: Type-approval number:	e13*72/245*95/54*2025*00
Raison(s) de l'extension: Reason(s) for extension:	Not applicable

Section I
Section I

0.1.	**Fabricant (marque commerciale du constructeur):** Make (trade name of manufacturer):	COTEK
0.2.	**Type:** Type:	S150
	Description(s) commerciale(s) générale(s): General commercial description(s):	Pure sine wave inverter
	Version(s)/Variante(s): *Version(s)/Variant(s):*	*S150-212, S150-224*
0.3.	**Moyens d'identification du type, s'ils sont marqués sur le ~~véhicule~~ / ~~composant~~ / entité technique:** [1, 2] Means of identification of type, if marked on the ~~vehicle~~ / ~~component~~ / separate technical unit:	S150-2??
0.3.1.	**Emplacement de ce marquage:** Location of that marking:	On the bottom of the inverter

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7-5. e-mark S300 (e13 022078) Declaration of Conformity

GRAND-DUCHE DE LUXEMBOURG

MINISTERE DES TRANSPORTS

Luxembourg, le 09 février 2004
19-21, Boulevard Royal
L-2910 Luxembourg
Tél. 478-1 – Télécopieur 241 817 – Télex 1465 CIVAIR LU

REFERENCE: e13*72/245*95/54*2078*00

ANNEXES: Documentation technique

Certificat de réception CE par type
EC Type-Approval Certificate

Communication concernant: (1)
Communication concerning the:

- **la réception par type**
- type-approval
- ~~**l'extension de la réception par type**~~
- ~~extension of type-approval~~
- ~~**le refus de la réception par type**~~
- ~~refusal of type-approval~~
- ~~**le retrait de la réception par type**~~
- ~~withdrawal of type-approval~~

d'un ~~type de véhicule~~ / ~~composant~~ / entité technique (1) **en ce qui concerne la directive 72/245/CEE conformément au dernier amendement par la directive 95/54/CE.**
of a ~~type of vehicle~~ / ~~component~~ / separate technical unit with regard to Directive 72/245/EEC, as last amended by Directive 95/54/EC.

Numéro de réception par type:
Type-approval number: e13*72/245*95/54*2078*00

Raison(s) de l'extension:
Reason(s) for extension: Not applicable

Section I
Section I

0.1.	**Fabricant (marque commerciale du constructeur):** Make (trade name of manufacturer):	COTEK
0.2.	**Type:** Type:	S300
	Description(s) commerciale(s) générale(s): General commercial description(s):	Pure sine wave inverter
	Version(s)/Variante(s): *Version(s)/Variant(s):*	*S300-212, S300-224*
0.3.	**Moyens d'identification du type, s'ils sont marqués sur le ~~véhicule~~ / ~~composant~~ / entité technique:** (1, 2) Means of identification of type, if marked on the ~~vehicle~~ / ~~component~~ / separate technical unit:	S300-2??
0.3.1.	**Emplacement de ce marquage:** Location of that marking:	On the bottom of the inverter

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COTEK

7-6. UL (UL458) Notice of Completion

Underwriters Laboratories Inc.®

Northbrook Division
333 Pfingsten Road
Northbrook, IL 60062-2096 USA
www.ul.com
tel: 1 847 272 8800
fax: 1 847 272 8129
Customer service: 1 877 854 3577

NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

2004-04-14

Ms. Sally Chang
Cotek Electronic Industrial Co Ltd
33 Rong Hsin Rd
Pa Teh City
Taoyuan Hsien Taiwan

Fax number: 886-3-3676029

Reference: File E225904 Project 03CA43875 P.O. Number A00312000036

Products: USL/CNL- POWER INVERTER FOR USE IN LAND VEHICLES MODELS S150, S300, S100, S200 SERIES

Dear Ms. Chang,

UL's investigation of your product has been completed under the above project number and the subject product was determined to comply with the applicable requirements.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Listing Mark only at the factory under UL's Follow-Up Service Program to the subject products, which are constructed as described below:

Identical to the subject models, which were submitted to UL for this investigation. The UL Records covering the product will be in the Follow-Up Services Procedure, File E225904, Volume 1.

To provide the manufacturer with the intended authorization to use the UL Mark, the addressee must send a copy of this Notice and all attached material to each manufacturing location as currently authorized in File E225904, Volume1.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn.

Sincerely,

Jeff Differt
Senior Project Engineer
Department: 3014CNBK
Tel: 847-664-3907
Fax: 847-509-6298
E-mail: Jeffrey.J.Differt@us.ul.com

Reviewed by:

Robert E Pence
Staff Engineer
Department: 3014CNBK
E-mail: robert.e.pence@us.ul.com

COTEK ELECTRONIC IND. CO., LTD. 文管中心 發行章

COTEK

No. 33, Rong Hsin Rd., Pa Teh City, Tao Yuan County, Taiwan

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2011/03

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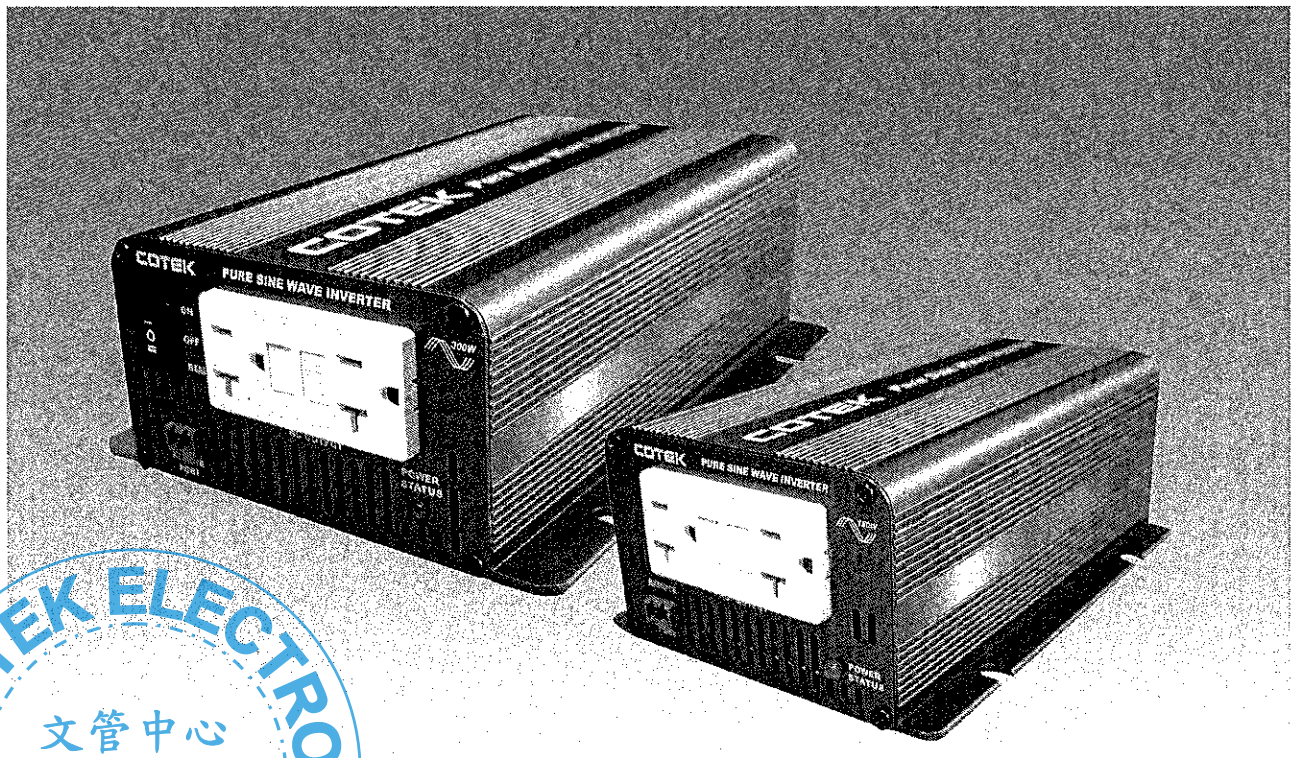
COTEK
出圖人 確認章

COTEK

S150,S300 Series
Pure Sine Wave Inverter
User's Manual



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文管中心
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CE

e13 022025

e13 022078

Esther

不須ECR\ECN更新圖檔明細表

產品料號	品名規格	版本	備註
75-1000-0012	USER MENU S150/S300 COTEK	A4	庫存自然汰換，通知移除承認書.
75-1000-0224	USER MENU ST600 COTEK	A1	庫存自然汰換,尚未承認
75-1000-0225	USER MENU ST600 NO COTEK	A1	庫存自然汰換,尚未承認
75-1000-0214	USER MENU CR6 COTEK	A1	無庫存,無承認,通知廠商更新圖檔

更新日期：2011/04/12

＊上述資料不需附ECE\ECN

確認：